

In the Title:

Please amend the title as follows:

-- APPARATUS AND METHOD FOR HANDLING SHEETMETAL
WORKPIECES TO BE WELDED --

In the Claims:

11. (First Amendment) An apparatus for handling a pair of sheet metal workpieces to be welded, comprising:

13' a first workpiece holder;

a second workpiece holder;

wherein the first and second workpiece holders are positioned so that an edge of one of the pair of sheet metal workpieces is in contact with, or separated by a gap from, an edge of the other sheetmetal workpieces;

a backing element disposed on a first side of the sheet metal workpieces; and

a squeeze roller, disposed on a second side of the sheetmetal workpieces opposite the first side and substantially aligned with the backing element, wherein the squeeze roller is formed as a body symmetrical in rotation, and wherein force selectively applied to the squeeze roller will cause plastic deformation of one of the pair of sheet metal workpieces and thereby cause the deformed sheet metal workpiece to extend into the gap.

12. (First Amendment) An apparatus for handling a pair of sheet metal workpieces to be welded, comprising:

a first workpiece holder;

a second workpiece holder;

wherein the first and second workpiece holders are positioned so that an edge of one of the pair of sheet metal workpieces is in contact with, or separated a gap from, an edge of the other sheetmetal workpieces;

a backing element disposed on a first side of the sheet metal workpieces; and

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a spherically shaped squeeze roller, disposed on a second side of the sheetmetal workpieces opposite the first side and substantially aligned with the backing element;

wherein force selectively applied to the squeeze roller will cause plastic deformation of one of the pair of sheet metal workpieces and thereby cause the deformed sheet metal workpiece to extend into the gap.

27. (First Amendment) An apparatus for handling a pair of sheet metal workpieces to be welded, comprising:

B²
a first workpiece holder;

a second workpiece holder;

wherein the first and second workpiece holders are positioned so that an edge of one of the pair of sheet metal workpieces is in contact with, or separated by a gap from, an edge of the other sheetmetal workpieces; and

means for plastically deforming one of the sheet metal workpieces, wherein said means for plastically deforming one of the sheetmetal workpieces can be selectively applied to cause that sheet metal workpiece to extend into the gap.

29. (First Amendment) An apparatus for handling a pair of sheet metal workpieces to be welded, comprising:

B³
a first workpiece holder;

a second workpiece holder;

wherein the first and second workpiece holders are positioned so that an edge of one of the pair of sheet metal workpieces is in contact with, or separated a gap from, an edge of the other sheetmetal workpieces; and

means for plastically deforming one of the sheet metal workpieces, wherein the means can be selectively applied to cause that sheet metal workpiece to extend into the gap, and wherein the means includes a backing element disposed on a first side of the sheet metal workpieces, and a spherically shaped squeeze roller that is mounted on a support to permit rotation in any direction and disposed on a second side of the sheetmetal workpieces opposite the first side and substantially aligned with the backing element, wherein force selectively

3 applied to the squeeze roller will cause plastic deformation of one of the pair of sheet metal workpieces and thereby cause the deformed sheet metal workpiece to extend into the gap.

33. (First Amendment) An apparatus for handling a pair of sheet metal workpieces to be welded, comprising:

a first workpiece holder;

a second workpiece holder;

wherein the first and second workpiece holders are positioned so that an edge of one of the pair of sheet metal workpieces is in contact with, or separated by a gap from, an edge of the other sheetmetal workpieces;

a pair of backing elements disposed on a first side of the sheet metal workpieces; and

4 a pair of squeeze rollers, disposed on a second side of the sheetmetal workpieces opposite the first side and substantially aligned with the backing elements, wherein the squeeze rollers are formed as a body symmetrical in rotation, and wherein force selectively applied to the squeeze rollers will cause plastic deformation in the pair of sheet metal workpieces and thereby cause the sheet metal workpieces to extend into the gap.

34. (First Amendment) An apparatus for handling a pair of sheet metal workpieces to be welded, comprising:

a first workpiece holder;

a second workpiece holder;

wherein the first and second workpiece holders are positioned so that an edge of one of the pair of sheet metal workpieces is in contact with, or separated a gap from, an edge of the other sheetmetal workpieces;

a pair of backing elements disposed on a first side of the sheet metal workpieces; and a pair of squeeze rollers, disposed on a second side of the sheetmetal workpieces opposite the first side and substantially aligned with the backing elements, wherein the squeeze rollers are spherically shaped, and wherein force selectively applied to the squeeze rollers will cause plastic deformation in the pair of sheet metal workpieces and thereby cause the sheet metal workpieces to extend into the gap.

Please add new claims 36-42:

36. (New) The apparatus of claim 11, wherein the squeeze roller is mounted on a support to permit rotation of the squeeze roller in any direction.

37. (New) A method for welding a pair of sheet metal workpieces with a butt joint, comprising the steps of:

positioning the first and second workpieces so that an edge of one of the pair of sheet metal workpieces is substantially in contact with an edge of the other of the pair of sheetmetal workpieces;

plastically deforming at least one of the workpieces with a squeeze roller before or in a welding zone to reduce a width of any gap present between the first and second workpieces;

guiding the squeeze roller along a joint of any desired curve form in a manner such that the plastic deformation produced is substantially dependent on the force acting on the squeeze roller and is substantially independent of the line of the joint; and

welding the workpieces together at the joint with a laser.

38. (New) The method of according to claim 37, wherein the at least one workpiece is plastically deformed in a region of the workpiece immediately adjacent to the edge of the workpiece.

39. (New) The method of claim 38, further comprising the step of guiding the laser so as to track the position of the gap resulting from the plastic deformation.

40. (New) A method for handling a pair of sheet metal workpieces to be welded, comprising the steps of:

positioning the first and second workpieces so that an edge of one of the pair of sheet metal workpieces is substantially in contact with an edge of the other of the pair of sheetmetal workpieces;

plastically deforming at least one of the workpieces with a squeeze roller along the edge that is substantially in contact with the other workpiece to reduce a width of any gap